

ABSTRACT

Method for welding objects having limited backside access to a cavity behind a region to be welded. The method includes inserting a fugitive backing material in an installation state into a first portion of the cavity proximate the region to be welded and then transforming the fugitive backing material to a rigid state. The method further includes forming a weld in the region and then transforming the fugitive backing material to a removable state and removing the fugitive backing material from the cavity. The method may also include placing a pre-formed weld backing in the cavity and filling the cavity with a fugitive backing material. The method further includes transforming the fugitive backing material to a rigid state, forming a weld, and transforming the fugitive backing material to a removable state. The method may further include removing the fugitive backing material and removing the pre-formed weld backing from the cavity.